

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior version, and listings, of claims in the application:

Listing of Claims:

1-52. (Canceled)

53. (Previously Presented) A printed circuit board comprising:

- a printed wiring board;
- at least one component mounted on said printed wiring board;
- an EMI shield conformingly disposed on surfaces of at least one region on the top and bottom of said printed circuit board; and
- an electrically conductive spring clip secured around an edge of said printed circuit board to electrically couple said EMI shield disposed on said top and bottom surfaces of said printed circuit board.

54. (Previously Presented) The printed circuit board of claim 53, further comprising:

- a top and bottom ground strip disposed on top and bottom surfaces, respectively, of said printed wiring board proximate to an edge of said printed wiring board;
- wherein said EMI shield comprises a conductive coating and a dielectric coating interposed between said conductive coating and selected portions of each said printed circuit board region, wherein said conductive coating is adhered to at least a portion of said ground strips; and
- wherein said spring clip is secured around said printed circuit board edge so as to contact said top and bottom ground strips.

55. (Previously Presented) The printed circuit board of claim 53, wherein said EMI shield comprises a conductive coating and a dielectric coating interposed between said conductive coating and selected portions of each said printed circuit board region; and

wherein said spring clip is secured around said printed circuit board edge so as to contact said conductive coating of said EMI shield disposed on said top and bottom of said printed circuit board.

56. (Previously Presented) The printed circuit board of claim 53, wherein said spring clip is a unitary device.

57. (Previously Presented) The printed circuit board of claim 53, wherein said spring clip is removably secured to said printed circuit board.

58. (Previously Presented) The printed circuit board of claim 53, wherein said spring clip is constructed and arranged to be manually secured to said printed circuit board.

59. (Previously Presented) The printed circuit board of claim 53, wherein said EMI shield comprises:

a conductive coating; and

a dielectric coating interposed between said conductive coating and selected portions of each said printed circuit board region.

60. (Previously Presented) The printed circuit board of claim 53, wherein said one or more regions of said EMI shield are physically contiguous on each of the top and bottom sides of the printed circuit board.

61. (Previously Presented) The printed circuit board of claim 59, further comprising:

a plurality of ground pads mounted in said printed wiring board, wherein said conductive coating of at least one of said printed circuit board regions is connected electrically to at least one of said plurality of ground pads;

a ground plane disposed in said printed wiring board; and

a plurality of ground vias each connected to said ground plane and to one or more of said plurality of ground pads.

62. (Previously Presented) The printed circuit board of claim 53, wherein said printed circuit board further comprises:

a shielded connector mounted on said printed wiring board, said shielded connector connected to a shielded cable through which signals travel; and

a plurality of ground pads mounted in said printed wiring board so as to substantially surround said shielded connector,

wherein said conductive coating electrically connects at least one of said plurality of ground pads to a shield of said shielded connector.

63. (Previously Presented) The printed circuit board of claim 53, wherein said printed wiring board comprises surface traces, wherein said dielectric coating and said surface traces are constructed and arranged such that said surface traces have a desired characteristic impedance.

64. (Previously Presented) The printed circuit board of claim 59, wherein said dielectric coating has a combination of adhesion and viscosity that enables said dielectric coating to be applied with atomization spray techniques so as to access and adhere to exposed surfaces of said one or more regions of the printed circuit board.

65. (Previously Presented) The printed circuit board of claim 59, wherein said dielectric coating is comprised of a plurality of successively-applied layers of dielectric material.

66. (Previously Presented) The printed circuit board of claim 59, wherein said dielectric coating is thixotropic.

67. (Previously Presented) The printed circuit board of claim 59, wherein said dielectric coating has a viscosity of at least 45" #2 Zahn Cup (full body).

68. (Previously Presented) The printed circuit board of claim 59, wherein said dielectric coating has an adhesion that enables it to pass the ASTM D-3359-83 Method A Tape Test using a 1" (25 mm wide) semi-transparent pressure-sensitive tape with an adhesion strength of 25-70 ounces per inch when tested in accordance with ASTM Test Method D-3330.

69. (Previously Presented) The printed circuit board of claim 59, wherein said conductive coating has a combination of adhesion and viscosity that enables said conductive coating to be applied with atomization spray techniques so as to access and adhere to said dielectric coating and exposed surfaces of said one or more regions of the printed circuit board.

70. (Previously Presented) The printed circuit board of claim 59, wherein said conductive coating has a viscosity of 10-40" Zahn cup #3.

71. (Previously Presented) The printed circuit board of claim 59, wherein said conductive coating has an adhesion that satisfies ASTM 5B rating.

72. (Previously Presented) The printed circuit board of claim 59, wherein said conductive coating has a thickness of 1.1 ± 0.2 mils.

73. (Previously Presented) A printed circuit board comprising:

- a printed wiring board with an internal ground plane;
- at least one component mounted on said printed wiring board;
- a top and bottom ground land disposed on top and bottom surfaces, respectively, of said printed wiring board and connected to said ground plane;
- an electrically continuous EMI shield conformingly adhered to surfaces of a region on the top and bottom of said printed circuit board, comprising a conductive coating; and a dielectric coating interposed between said conductive coating and selected portions of each said printed circuit board region,
- wherein said conductive coating is applied to at least a portion of said top and bottom ground lands.

74. (Previously Presented) The printed circuit board of claim 73, further comprising:

- at least one ground via connecting said ground lands to said ground plane.

75. (Previously Presented) The printed circuit board of claim 73, wherein said ground lands are disposed proximate to a same edge of said printed wiring board, and wherein said printed circuit board further comprises:

- edge plating disposed on said printed wiring board edge, said edge plating being connected to said ground lands.

76. (Previously Presented) The printed circuit board of claim 75, wherein said edge plating edge plating is connected to said ground plane.

77. (Previously Presented) The printed circuit board of claim 75, wherein said ground lands are ground strips.

78. (Previously Presented) The printed circuit board of claim 77, wherein said ground strips are substantially parallel to said printed wiring board edge.

79. (Previously Presented) The printed circuit board of claim 73, wherein said ground lands are disposed proximate to a same edge of said printed wiring board.

80. (Previously Presented) The printed circuit board of claim 79, further comprising:

at least one electrically conductive spring clip secured around said printed wiring board edge so as to contact said top and bottom ground lands.

81. (Previously Presented) The printed circuit board of claim 80, wherein said at least one spring clip is a unitary device.

82. (Previously Presented) The printed circuit board of claim 80, wherein said at least one spring clip is removably secured around said printed wiring board edge.

83. (Previously Presented) The printed circuit board of claim 80, wherein said at least one spring clip is constructed and arranged to be manually secured to said printed circuit board.

84. (Previously Presented) The printed circuit board of claim 73, wherein said EMI shield adheres to the surfaces of a plurality of printed circuit board regions on said top and bottom of said printed circuit board.

85. (Previously Presented) The printed circuit board of claim 73, wherein said printed circuit board further comprises:

a plurality of ground pads mounted in said printed wiring board, wherein said conductive coating of at least one of said printed circuit board regions is connected electrically to at least one of said plurality of ground pads;

a ground plane disposed in said printed wiring board; and

a plurality of ground vias each connected to said ground plane and to one or more of said plurality of ground pads.

86. (Previously Presented) The printed circuit board of claim 73, wherein said printed circuit board further comprises:

a shielded connector mounted on said printed wiring board, said shielded connector connected to a shielded cable through which signals travel; and

a plurality of ground pads mounted in said printed wiring board so as to substantially surround said shielded connector,

wherein said conductive coating electrically connects at least one of said plurality of ground pads to a shield of said shielded connector.

87. (Previously Presented) The printed circuit board of claim 73, wherein said printed wiring board comprises surface traces, wherein dielectric coating and said surface traces are constructed and arranged such that said surface traces have a desired characteristic impedance.

88. (Previously Presented) The printed circuit board of claim 73, wherein said dielectric coating is thermally conductive.

89. (Previously Presented) The printed circuit board of claim 73, wherein said dielectric coating has a combination of adhesion and viscosity that enables said dielectric coating to be applied with atomization spray techniques so as to access and adhere to exposed surfaces of said one or more regions of the printed circuit board.

90. (Previously Presented) The printed circuit board of claim 89, wherein said conductive coating has a combination of adhesion and viscosity that enables said conductive coating to be applied with atomization spray techniques so as to access and adhere to said dielectric coating and exposed surfaces of said one or more regions of the printed circuit board.

91. (Previously Presented) A printed circuit board comprising:

- a printed wiring board;
- a component adapted to be detachably mounted on said printed wiring board;
- a first conformal EMI shield that coats a surface of said printed wiring board;
- a second conformal EMI shield that coats a surface of said detachable component;

and

a coupling mechanism ~~for~~ configured to electrically disconnect and connect said first and second conformal EMI shields when said component and said printed wiring board are detached and reattached, respectively.

92. (Previously Presented) The printed circuit board of claim 91, wherein said coupling mechanism comprises:

- a first connector mounted on said printed wiring board and electrically coupled to said first EMI shield; and
- a second connector, matable with said first connector, integral with said detachable component and electrically coupled to said second EMI shield.

93. (Previously Presented) The printed circuit board of claim 92, wherein said first connector is a shielded connector comprising a shield electrically coupled to said first EMI shield, and wherein said second connector is a shielded connector comprising a shield electrically coupled to said second EMI shield.

94. (Previously Presented) The printed circuit board of claim 92, wherein said printed circuit board further comprises:

- a plurality of ground pads mounted in said printed wiring board so as to substantially surround said first shielded connector,
- wherein said first EMI shield is electrically connected to said plurality of ground pads.

95. (Previously Presented) The printed circuit board of claim 91, wherein said printed circuit board further comprises:

a plurality of ground pads mounted in said printed wiring board, wherein said first EMI shield comprises a conductive coating electrically connected to at least one of said plurality of ground pads;

a ground plane disposed in said printed wiring board; and

a plurality of ground vias each connected to said ground plane and to one or more of said plurality of ground pads.

96. (Previously Presented) The printed circuit board of claim 92, wherein said printed wiring board comprises surface traces, wherein a dielectric coating of said first EMI shield and said surface traces are constructed and arranged such that said surface traces have a desired characteristic impedance.

97. (Currently Amended) A ~~printed circuit board~~ method for manufacturing a printed circuit board comprising:

providing a printed wiring board with at least one surface trace;

mounting at least one component ~~mounted on said~~ on the printed wiring board; and

selecting a composition and thickness of each of a dielectric coating and a conductive coating of a conformal EMI shield such that, when applied to a surface of the printed wiring board having one of said at least one surface trace disposed thereon, said one surface trace has a desired characteristic impedance;

applying the conformal ~~an electrically continuous~~ EMI shield to the printed circuit board such that it conformingly adhered adheres to top and bottom surfaces of said printed circuit board including said surface of said printed circuit wiring board having said one surface trace disposed therein, comprising a conductive coating and a and such that said dielectric coating has said selected composition and thickness and said conductive coating has said selected composition and thickness, with said dielectric coating being interposed between said conductive coating and said printed circuit board surfaces, ~~surface;~~

~~wherein said EMI shield has a composition and thickness such that said at least one surface trace has a desired characteristic impedance.~~

98. (Currently Amended) The ~~printed circuit board~~ method of claim 113, wherein said providing a coupling mechanism comprises:

disposing a top and bottom ground land disposed on top and bottom surfaces, respectively, of said printed wiring board and such that the top and bottom ground lands are connected to an internal ground plane of the printed wiring board, and wherein applying the conformal EMI shield to the printed circuit board further comprises:

applying said EMI shield is applied to at least a portion of said top and bottom ground lands.

99. (Currently Amended) The ~~printed circuit board~~ method of claim 98, wherein said disposing a top and bottom ground land on top and bottom surfaces, respectively, of said printed wiring board comprises:

disposing the ground lands are disposed proximate to a same edge of said printed wiring board, and wherein said printed circuit board method further comprises:

providing edge plating disposed on said printed wiring board edge, wherein said edge plating is electrically coupled to said ground lands.

100. (Currently Amended) The ~~printed circuit board~~ method of claim 98, wherein disposing a top and bottom ground land on top and bottom surfaces, respectively, of said printed wiring board comprises:

disposing a top and bottom ground strip on top and bottom surfaces, respectively, of said printed wiring board. wherein said ground lands are ground strips.

101. (Currently Amended) The method of claim 100, wherein disposing a top and bottom ground strip on top and bottom surfaces, respectively, of said printed wiring board comprises:

disposing a top and bottom ground strip on top and bottom surfaces, respectively, of said printed wiring board such that said ground strips are substantially parallel to said printed wiring board edge.

102. (Currently Amended) The ~~printed circuit board~~ method of claim ~~[[97]]~~98, wherein disposing a top and bottom ground land on top and bottom surfaces, respectively, of said printed wiring board comprises:

disposing a top and bottom ground land on top and bottom surfaces, respectively, of said printed wiring board such that said ground lands are disposed proximate to a same edge of said printed wiring board.

103. (Currently Amended) The ~~printed circuit board~~ method of claim 102, further comprising:

securing at least one electrically conductive spring clip ~~secured~~ around said printed wiring board edge so as to contact said top and bottom ground lands.

104. (Currently Amended) The ~~printed circuit board~~ method of claim 103, wherein securing at least one electrically conductive spring clip around said printed wiring board edge comprises:

securing at least one electrically conductive unitary spring clip around said printed wiring board edge so as to contact said top and bottom ground lands.

~~wherein said at least one spring clip is a unitary device.~~

105. (Currently Amended) The ~~printed circuit board~~ method of claim 103, wherein securing at least one electrically conductive spring clip around said printed wiring board edge comprises:

removably securing at least one electrically conductive unitary spring clip around said printed wiring board edge so as to contact said top and bottom ground lands.

~~wherein said at least one spring clip is removably secured around said printed wiring board edge.~~

106. (Currently Amended) The ~~printed circuit board~~ method of claim 103, wherein securing at least one electrically conductive spring clip around said printed wiring board edge comprises:

manually securing at least one electrically conductive spring clip around said printed wiring board edge so as to contact said top and bottom ground lands.

~~wherein said at least one spring clip is constructed and arranged to be manually secured to said printed circuit board.~~

107. (Currently Amended) The ~~printed circuit board~~ method of claim 97, wherein providing a printed wiring board with at least one surface trace comprises: providing a printed wiring board with at least one surface trace, an internal ground plane and a plurality of ground vias each connected to the internal ground plane, and

wherein the method ~~said printed circuit board~~ further comprises:

disposing a plurality of ground lands disposed on said top and bottom surfaces of said printed wiring board so as to be connected to at least one of said plurality of ground vias and wherein said EMI shield,

is electrically connected to at least one of said plurality of ground lands; and

a plurality of ground vias each connected to an internal ground plane of the printed wiring board and to one or more of said plurality of ground pads.

108. (Canceled)

109. (Currently Amended) The ~~printed circuit board~~ method of claim 97, wherein said dielectric coating is thermally conductive.

110. (Currently Amended) The ~~printed circuit board~~ method of claim 97, wherein applying the conformal EMI shield to the printed circuit board comprises:

~~said dielectric coating has a combination of adhesion and viscosity that enables said dielectric coating to be applied~~

applying said dielectric coating with atomization spray techniques so as ~~to~~ that the dielectric coating accesses and adheres to exposed surfaces of ~~said~~ one or more regions of the printed circuit board.

111. (Currently Amended) The ~~printed circuit board~~ method of claim 110, wherein

applying the conformal EMI shield to the printed circuit board comprises: ~~said conductive coating has a combination of adhesion and viscosity that enables said conductive coating to be applied~~

applying said conductive coating with atomization spray techniques so as ~~to~~ that the conductive coating accesses and adheres to said dielectric coating and exposed surfaces of said one or more regions of the printed circuit board.

112. (Currently Amended) The method of claim 97, further comprising: ~~wherein said printed circuit board further comprises:~~

mounting a shielded connector ~~mounted~~ on said printed wiring board, board such that said shielded connector is adapted to be connected to a shielded cable through which signals travel; and

mounting a plurality of ground pads ~~mounted~~ in said printed wiring board so as to substantially surround said shielded connector,

wherein said conductive coating electrically connects at least one of said plurality of ground pads to a shield of said shielded connector.

113. (Currently Amended) The ~~printed circuit board~~ method of claim 110, further comprising:

providing a coupling mechanism that electrically couples said EMI shield adhered ~~to said~~ to a top surface of said printed circuit board with said EMI shield adhered ~~to said~~ to a bottom surface of said printed circuit board.